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10/532,177	04/21/2005	Angel Ayala Hermosillo	25826/09000	6748

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EXAMINER
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DUONG, THANH P

ART UNIT	PAPER NUMBER
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1797

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02/07/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/532,177

Applicant(s)

AYALA HERMOSILLO, ANGEL

Examiner

TOM P. DUONG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Tom Duong  
2/1/08

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/21/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerli et al. (1,032,536) and Mercer (3,572,264). Note, the system is being examined as an apparatus.

Regarding claims 1 and 14, Gerli et al. discloses a system (Figure 1) for eliminating emissions to the atmosphere of pollutant gases from internal combustion engine (page 1, lines 13-20) comprising carbon dioxide and other gases (page 1, lines 12-30) produced by a combustion process in a combustion system having an intake (e) and an emission area (a), comprising: a first mixing system (c) wherein the pollutant gases being emitted from the emission area (a) of the combustion system (internal combustion engine); a reaction system (c2) in communication with the first mixing system (c) and the mixture stream coming from the first mixing system (c) reacts with inorganic material (page 2, lines 58-62) and a second mixing system (c3) is in communication with the reaction system (c2).

Gerli et al. fails to disclose a return passage from the second mixing system to the intake area of the combustion system.

However, Mercer '264 teaches that it is desirable to provide a return passage (19) from the filter chamber or mixing system (22) to the intake area (21) of the combustion system (10) in order to recycle the clean air so that it can be reused for combustion process.

Thus, it would have been obvious in view of Mercer '264 to one having ordinary skill in the art to modify the device of Gerli et al. with a return passage as taught by Mercer '264 in order to recycle the clean air so that it can be reused for combustion process.

Note, the recitation with respect to the carbon dioxide, water mixture, carbonates, and bicarbonates is directed to the contents thereof during an intended operation and does not impart further structural limitation to the claimed invention. See *Ex Parte Thibault*, 164 USPQ 666, 667, (Bd. App. 1969). In addition, the examiner notes that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP 2114 and 2115.

Regarding claim 15, the above applied references provide all structural features of the claimed invention and therefore, the device of the applied references are capable of performing the function of continuously eliminating the emissions of gases. Note, the recitation with respect to "the system for eliminating emissions has a continuous gas

flow since the vacuum formed in the automobile vehicle's internal combustion motor sucks the gases inside the system at the time that the gases generated by the automobile vehicle's internal combustion motor push the gases inside the system for eliminating emissions of gases" is directed to the operation of a device and the examiner notes that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP 2114 and 2115.

Regarding claims 16-18, the recitation with respect to the use of the device in various processes or applications is directed to the intended use of the claimed invention and the device of the applied references is capable of performing the intended use as claimed.

2. Claims 2-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (Gerli et al. '536 and Mercer '264) and further in view of Macedo et al. (5,405,590). The applied references disclose the reaction chamber with a mixing chamber (c2) but do not disclose the inorganic material vessel with a supplied duct that feed the inorganic material to the mixing chamber.

Regarding claim 2, Macedo et al. discloses the inorganic material vessel (65) with supplied ducts (70,71) connected to the reaction chambers (20,80) to facilitate the delivery of the reagents to the reaction chamber for treating the exhaust gas.

Thus, it would have been obvious in view of Macedo et al. to one having ordinary skill in the art to modify the device of the applied references with an inorganic storage

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vessel with duct connecting to the reaction chamber to facilitate the delivery of the reagents to the reaction chamber.

Regarding claim 3, the recitation with respect to the carbon dioxide, carbon dioxide, nitrogen oxides, sulfur oxides, and non-combusted hydrocarbons is directed to the contents thereof during an intended operation and does not impart further structural limitation to the claimed invention. See *Ex Parte Thibault*, 164 USPQ 666, 667, (Bd. App. 1969).

Regarding claim 4, the combination of the applied references as applied in claim 2 provides the device capable of recycling the carbon monoxide (via return passage) to the combustion system for completing the conversion of carbon monoxide to carbon dioxide.

Regarding claim 5, the recitation with respect to the nitrates and nitrites is directed to the contents thereof during an intended operation and does not impart further structural limitation to the claimed invention. See *Ex Parte Thibault*, 164 USPQ 666, 667, (Bd. App. 1969).

Regarding claim 6, the combination of the applied references as applied in claim 2 provides the device capable of recycling the nitrogen oxides (via return passage) to the combustion system to be used as oxygen sources to enhance the combustion process.

Regarding claims 7-11, the recitation with respect to the sulfur dioxide, sulfites, water, and inorganic material is directed to the contents thereof during an intended operation and does not impart further structural limitation to the claimed invention. See *Ex Parte Thibault*, 164 USPQ 666, 667, (Bd. App. 1969).

Regarding claim 12, Gerli shows the gas duct (9d) is submerged in the first mixing system.

Regarding claim 13, Mercer shows the water injection system (17) is located in the exhaust duct (13) to facilitate intermixing water with the exhaust gas.

3. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (Gerli et al. '536 and Mercer '264) and further in view of Polcer (5,047,220). The applied references essentially disclose the features of the claimed invention except an air pump to deliver air into the system.

Polcer teaches that it is desirable to provide a blower (28), which constitutes an air pump, in the flue gas treatment system (Fig. 1) to facilitate the delivery and mixing ammonia or reagent with the flue gas to enhance the treatment of the exhaust gas.

Thus, it would have been obvious in view of Polcer to one having ordinary skill in the art to modify the applied references with an air pump as taught by Polcer in order to facilitate the delivery and intermixing of the reagent with the exhaust gas to enhance the treatment of the exhaust gas.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOM P. DUONG whose telephone number is (571)272-2794. The examiner can normally be reached on 8:00AM - 4:30PM (IFP).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Duong  
February 1, 2008

*Tom Duong*